

AMENDMENTS TO DRAWING FIGURES

Applicants propose amending Fig. 3 and 4 as shown on Page 11 below by making the following changes in the reference numerals:

Fig. 3, change 23 to 23.1.

Fig. 3, change 24 to 24.1

Fig. 4, change 23 to 23.2.

Fig. 4, change 24 to 24.2

These proposed changes are supported on Page 7 at Lines 30-32 of the specification.

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REMARKS

Claims 1, 4 and 13 are amended and Claims 2, 3 and 14 are cancelled. Claims 1 and 4-13, as amended, remain in the application. No new matter is added by the amendments to the drawings and the claims.

The Rejections:

In the Office Action dated July 18, 2006, the Examiner rejected Claims 1-7, 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over Baranda (WO 99/43589) in view of Kinoshita (US 5891561) in further view of Danhauer (US 2002/0098935).

Referring to Claims 1-6, 9, 10, 13 and 14 (Applicants note that the Examiner did not list Claims 9 and 10 in the rejection), the Examiner stated that Baranda discloses a drive motor (42) mounted at a head of an elevator shaft and having a drive pulley; an elevator car (16) movable in the elevator shaft; a counterweight (48) movable in the elevator shaft and arranged laterally of the elevator car (See at least Pg. 2 - Pg. 3 L. 17 & at least Fig. 2) and a flat-belt-like support means supporting the elevator car by under looping and engaging the drive pulley. The Examiner admitted that Baranda does not disclose the support means being a wedge-ribbed belt having a running surface facing the drive pulley and a plurality of ribs and grooves formed with an angle in the range of 80 to 100 degrees in the running surface and extending in parallel in a longitudinal direction of the support means. The Examiner stated that Kinoshita discloses a wedge-ribbed belt (10) with ribs and grooves being one of triangular-shaped and trapezium-shaped in cross section (See at least Col. 3 L. 12-30 and at least Fig. 1) and that Danhauer discloses a belt (10) with a plurality of ribs and grooves formed in the running surface and extending in parallel in a longitudinal direction on the support means (See Sect. 0017 & Figs. 1-2). The Examiner further stated that Danhauer discloses that the belt (10) is provided with a plurality of transverse grooves (34) (See at least Sect. 0025), that the grooves are provided at an inclined angle between 20° and 85°, and it should be noted that the belt (10) has at least two wedge-ribbed belt strands arranged in parallel (See Figs. 1-2). According to the Examiner, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Baranda to include the teachings of Danhauer and provide a wedge-ribbed belt with a plurality of ribs and grooves formed in the running surface as well as transverse grooves and ribbed strands

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formed at an angle between 80 to 100 degrees as taught by Kinoshita and Danhauer so that the belt could provide better traction, increased flexibility, and a higher load capacity.

Referring to Claim 7, the Examiner admitted that Baranda does not disclose that the drive pulley has an external diameter in a range of 70 to 100 millimeters, but stated that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Baranda to include drive pulleys that were in the range of 70 to 100 millimeters so that greater torque and lifting capacity could be achieved.

Referring to Claims 9 and 10 (As stated above, Applicants note that the Examiner did not list Claims 9 and 10 in the rejection), the Examiner stated that Baranda discloses that the drive motor and drive pulley are mounted in a space which lies between one side of the elevator car, when the elevator car is standing in an uppermost position in the elevator shaft, and an adjacent wall of the elevator of the elevator shaft and an axis of the drive pulley is arranged horizontally and parallel to the one side of the elevator car (See Fig. 2), and Baranda further discloses a belt connected at one end of the side of the elevator car at a first support means fixing point (104), which extends from the first support means fixing point vertically upwards to a side which faces the elevator car, of a periphery of the drive pulley, loops around the drive pulley by 180 and then runs vertically to a second support means fixing point (102) at the counterweight (See Fig. 3). The Examiner admitted that Baranda does not disclose that the belt connected at one end of the elevator is a wedge-ribbed belt, but, according to the Examiner, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Baranda an implement an wedge-ribbed belt as taught by Kinoshita for reasons as discussed above.

The Examiner rejected Claim 8 under 35 U.S.C. 103(a) as being unpatentable over Baranda in view of Kinoshita in further view of Danhauer and in further view of Bauer (US 2002/0185338). The Examiner admitted that Baranda does not disclose that the drive motor and drive pulley are mounted on a drive bracket attached to at least one guide columns. The Examiner stated that Bauer discloses a drive motor (14) and a drive pulley (13) are mounted on a bracket attached to at least one of the guide columns (See at least Sect. 0017 & at least Fig. 2). According to the Examiner, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Bauer (Baranda?) to include the teachings

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of Bauer and provide a bracket so that the drive motor and drive pulley could be mounted together so that when forces were exerted as a result of the elevator they would not be loaded on the walls.

The Examiner rejected Claims 11 and 12 under 35 U.S.C. 103(a) as being unpatentable over Baranda in view of Kinoshita in view of Danhauer and in further view of Mori (US 2002/0112924). The Examiner admitted that Baranda does not disclose a belt transmission means for coupling the drive motor to the drive pulley or that the belt transmission means includes at least one cogged belt and a wedge-ribbed belt coupling the drive motor to the drive pulley. The Examiner stated that Mori discloses a belt transmission means coupling the drive motor (52) to the drive pulley (51) (See Sect. 0040 & Figs. 1, 19), Kinoshita discloses a wedge-ribbed belt (10) with ribs and grooves being one of triangular-shaped and trapezium-shaped in cross section (See at least Col. 3 L. 12-30 and at least Fig. 1), and Danhauer discloses a belt (10) with a plurality of ribs and grooves formed in the running surface and extending in parallel in a longitudinal direction on the support means (See Sect. 0017 & Figs. 1-2). According to the Examiner, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Baranda in view of Kinoshita, Danhauer and Mori to provide a belt transmission that coupled the drive motor and drive pulley that consisted of at least one of a cogged belt and a wedge-ribbed belt and it would have been obvious to use a cogged and wedge-ribbed belt so that the elevator could benefit from an increased load capacity and better traction.

The Response:

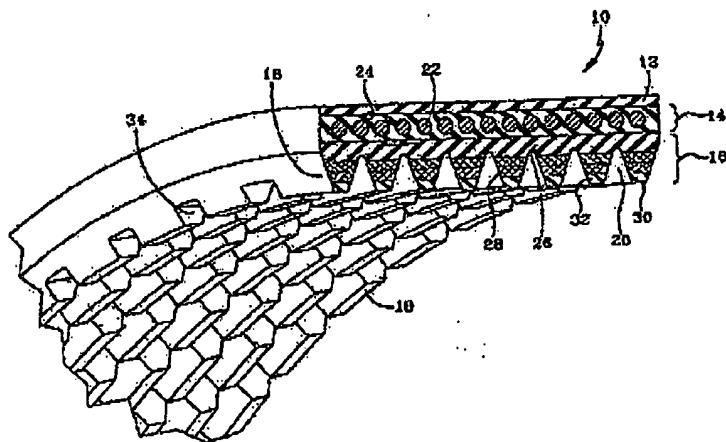
Applicants amended Claim 1 to include the subject matter of cancelled Claims 2 and 3 and amended independent Claim 13 to include the subject matter of cancelled Claim 14. All of Applicants' claims now recite a plurality of ribs and grooves formed in the running surface and extending in parallel in a longitudinal direction of the belt, the ribs and grooves being one of triangular-shaped and trapezium-shaped in cross section and being formed with lateral flanks at an angle in a range of 80° to 100°.

The Examiner rejected all of the claims based upon a combination of Baranda, Kinoshita and Danhauer. In particular, the Examiner relies upon Danhauer as disclosing "that the belt (10)

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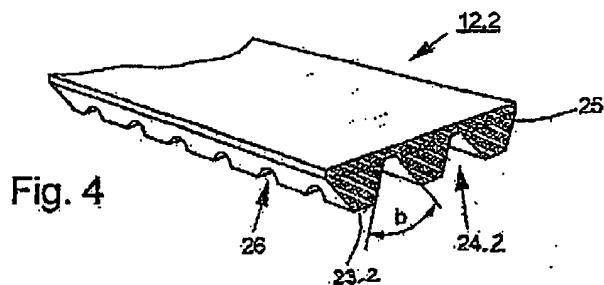
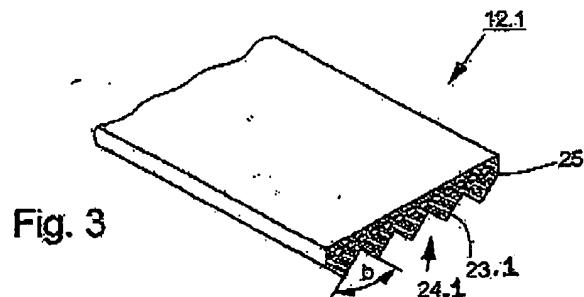
is provided with a plurality of transverse grooves (34) (See at least Sect. 0025), that the grooves are provided at an inclined angle between 20° and 85°.

The Examiner's statement regarding the construction disclosed by Danhauer is correct. However, the Danhauer construction does not correspond to the belt recited in Applicants' claims. As shown in Danhauer Fig. 2, reproduced below, the ribs 18 and the grooves 20 extend in the longitudinal direction of the belt 10. Transverse grooves 34 extend across the width of the belt 10 and may be inclined at any angle relative to the longitudinal grooves 20. The preferred angle of inclination is 20° to 85°. The angle of inclination refers to the relationship between the direction of the longitudinal axes of the parallel grooves 20 (parallel to the longitudinal direction of the belt 10) and the longitudinal axes of the transverse grooves 34 that extend across the width of the belt 10. It is clear from the Danhauer description and Fig. 2 that the preferred angle of inclination of 20° to 85° does not in any way define the angle formed by the lateral flanks of the grooves 34.



Applicants' amended Claim 1 recites "a flat-belt-like support means supporting said elevator car and engaging said drive pulley, said support means being a wedge-ribbed belt having a running surface facing said drive pulley and a plurality of ribs and grooves formed in said running surface and extending in parallel in a longitudinal direction of said support means, said ribs and grooves being one of triangular-shaped and trapezium-shaped in cross section and 0001327020087809479-1

formed with lateral flanks at an angle in a range of 80° to 100°. Applicants' amended Claim 13 recites "a wedge-ribbed belt adapted to support the elevator car in a cantilever mode and engaging the drive pulley, said belt having a running surface adapted to face the drive pulley and a plurality of ribs and grooves formed in said running surface and extending in parallel in a longitudinal direction of said belt, said ribs and grooves being one of triangular-shaped and trapezium-shaped in cross section and being formed with lateral flanks at an angle in a range of 80° to 100°. This belt construction is shown in Applicants' Figs. 3 and 4, reproduced below, wherein the ribs 23.1, 23.2 and the grooves 24.1, 24.2 extend parallel in a longitudinal direction of the belt 12.1, 12.2. The angle "b", as explained on Page 8, Lines 1-9, is formed between the lateral flanks of the groove or adjacent ribs. The angle "b" is the angle recited in Applicants' claims.



In contrast to Applicants' Claims 1 and 13, Danhauer discloses a wedge-ribbed belt having a plurality of ribs and grooves being trapezium-shaped in cross section, the belt being provided with a plurality of transversely extending grooves in its compression section (the compression section is the section of the belt with the longitudinally extending ribs and grooves), the transverse grooves being inclined at an angle of 20° to 80° relative to the longitudinal grooves. The angle of 80° to 100° as specified in Claims 1 and 13 is related to the angle between the flanks of the triangular-shaped or trapezium-shaped cross sections of the ribs and grooves extending parallel to the longitudinal direction of the belt. It is obvious that the angle as specified in Danhauer defines a completely different geometric feature of a wedge-ribbed belt than the angle as recited in Applicants' Claims 1 and 13.

In summary, Danhauer does not show or suggest a plurality of ribs and grooves formed in the running surface and extending in parallel in a longitudinal direction of the belt, the ribs and grooves being one of triangular-shaped and trapezium-shaped in cross section and being formed with lateral flanks at an angle in a range of 80° to 100°. The cited references, alone or in combination, do not show or suggest the claimed belt.

In view of the amendments to the claims and the above arguments, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.

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